



OVERVIEW OF COASTAL PROTECTION AND RESTORATION IN THE CALCASIEU/SABINE AND MERMENTAU BASINS

State of the Coast 2018
New Orleans, LA

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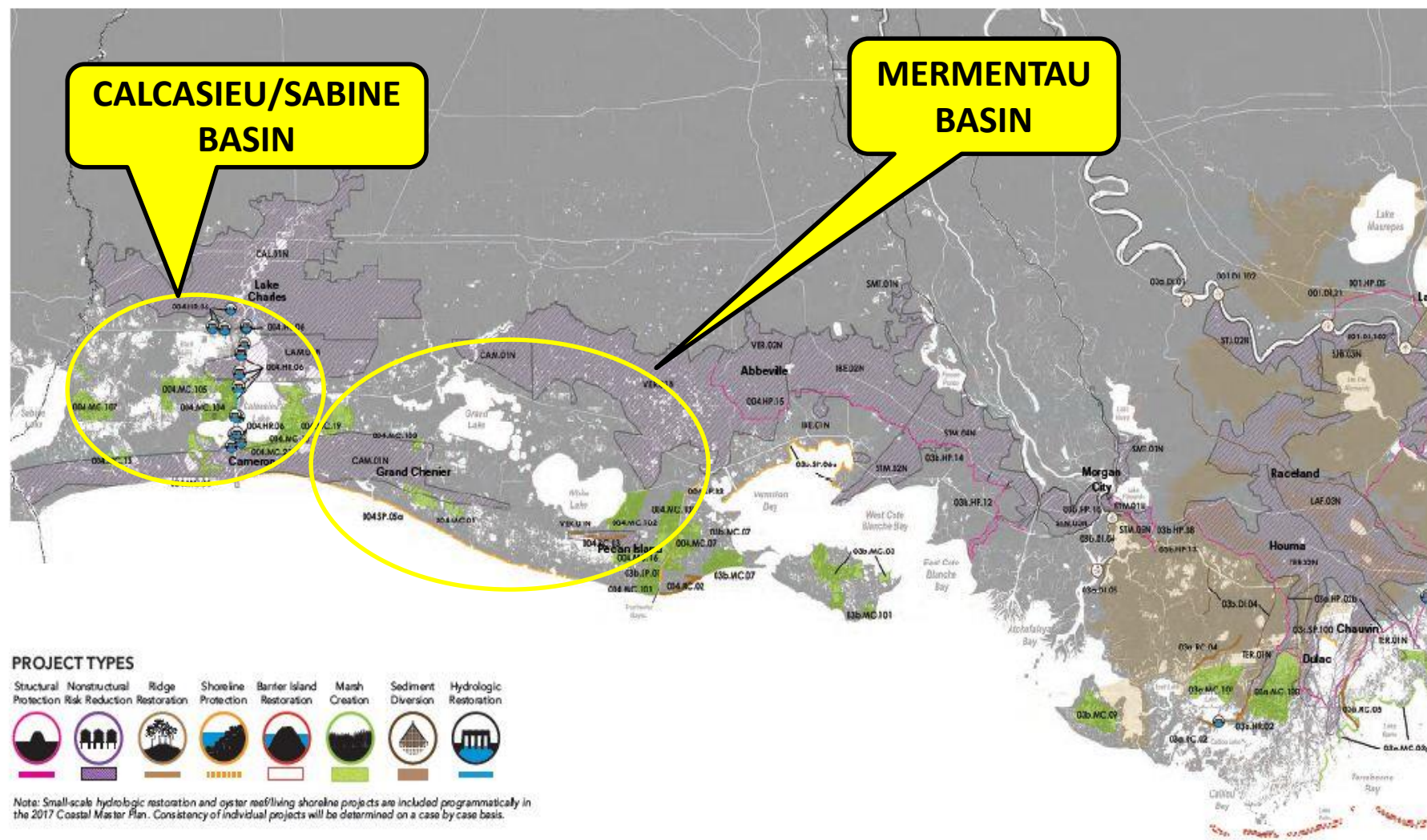


committed to our coast

Louisiana's CWPPRA Basins



SOUTHWEST COAST PROJECTS



PROJECTS SELECTED FOR INCLUSION

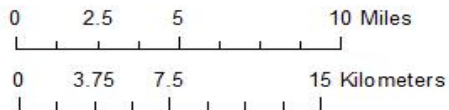
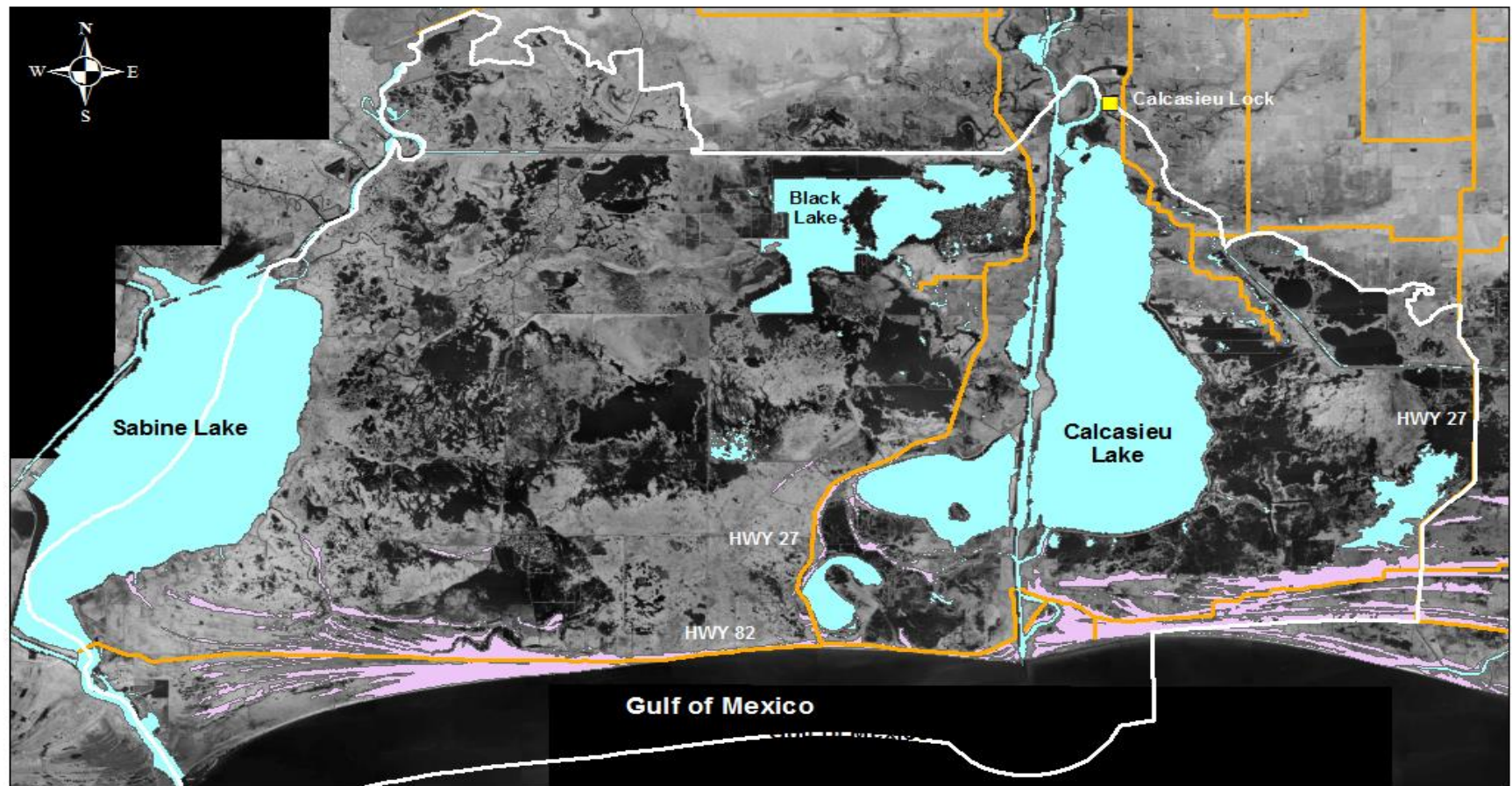
The maps on the following pages depict the projects selected for inclusion for the 2017 Coastal Master Plan. The maps are accompanied by tables, which provide information on project details such as project

descriptions, costs, and implementation periods. Further information on all projects considered can be found in Appendix A, Project Definition.

▲ FIGURE 4.12

2017 Coastal Master Plan projects to be implemented in the Southwest Coast region: 28 restoration projects, 6 structural protection projects, and 12 nonstructural risk reduction projects.

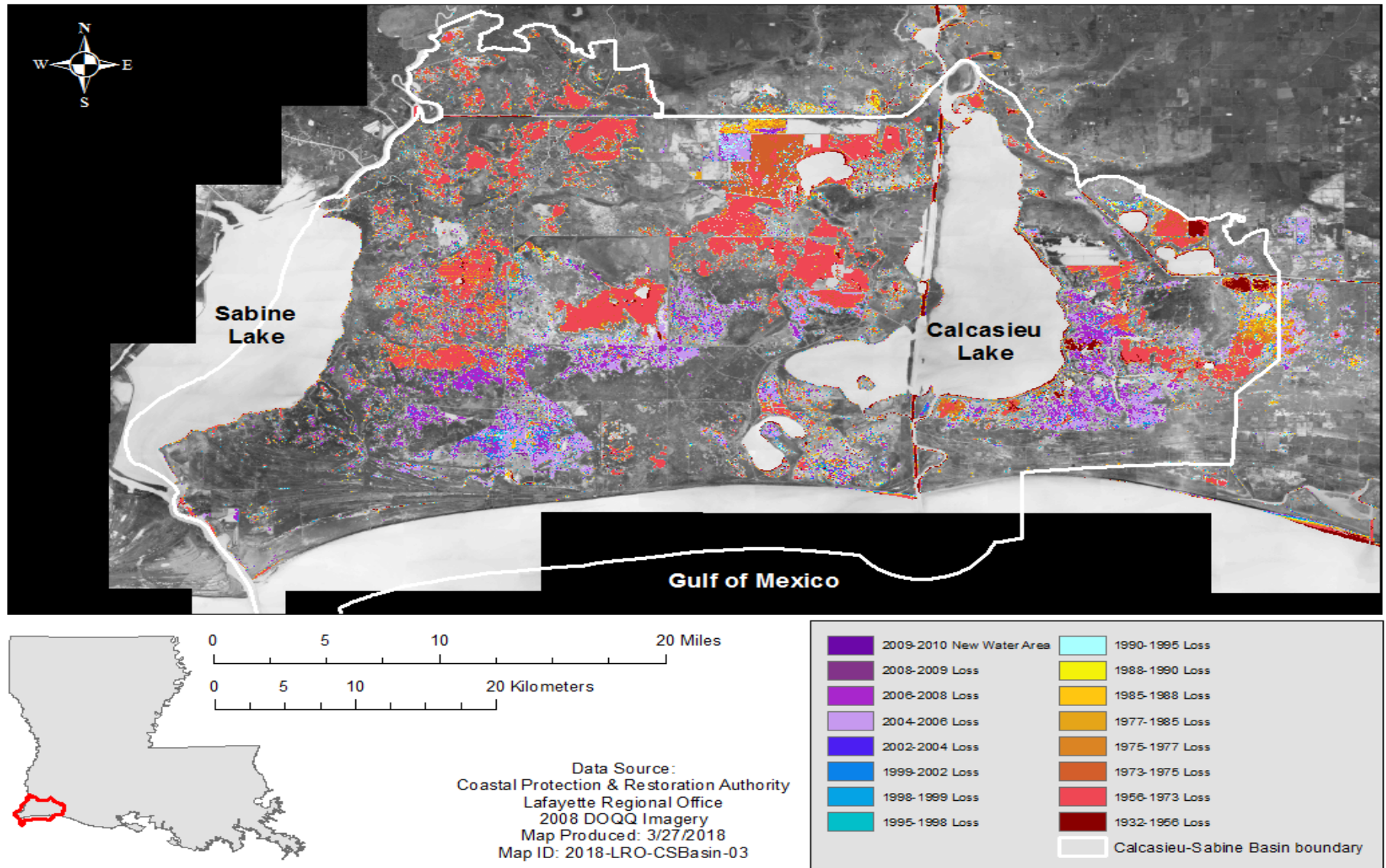
CALCASIEU/SABINE BASIN



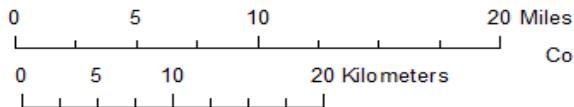
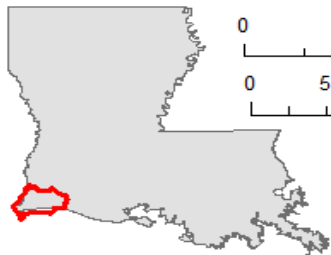
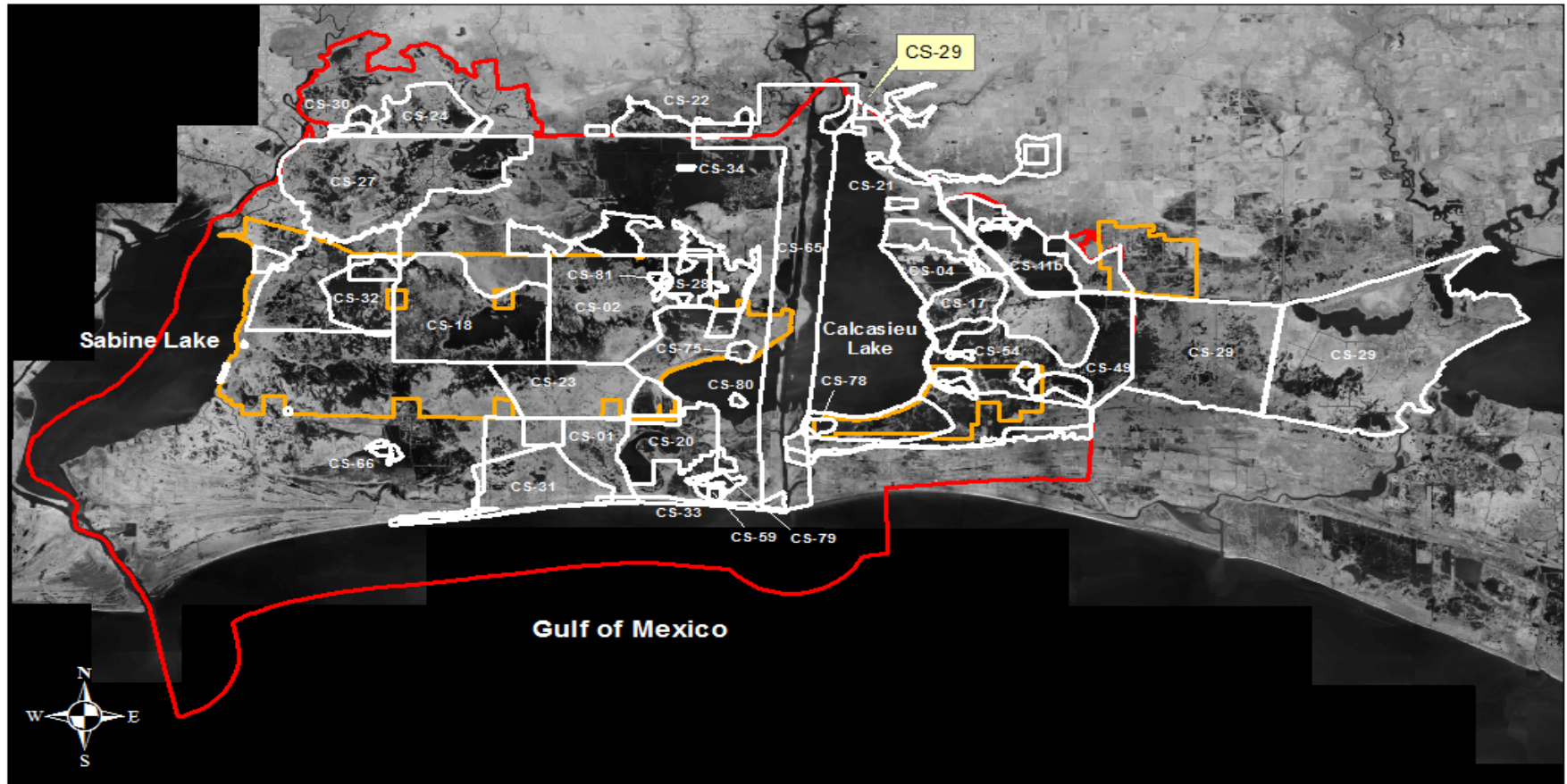
Data Source:
Coastal Protection & Restoration Authority
Lafayette Regional Office
2008 DOQQ Imagery
Map Produced: 3/16/2018
Map ID: 2018-LRO-CSBasin-01

- Major Highways
- Chenier Plains
- Calcasieu-Sabine Basin boundary
- USACE Water Control Structure

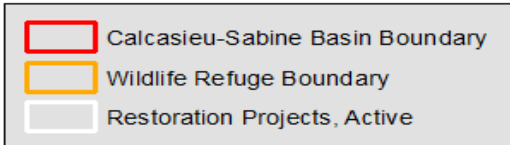
Historical Persistent Land Loss 1932-2010



Constructed Protection and Restoration Projects



Data Source:
Coastal Protection & Restoration Authority
Lafayette Regional Office
2008 DOQQ Imagery
Map Produced: 3/20/2018
Map ID: 2018-LRO-CSBasin-02



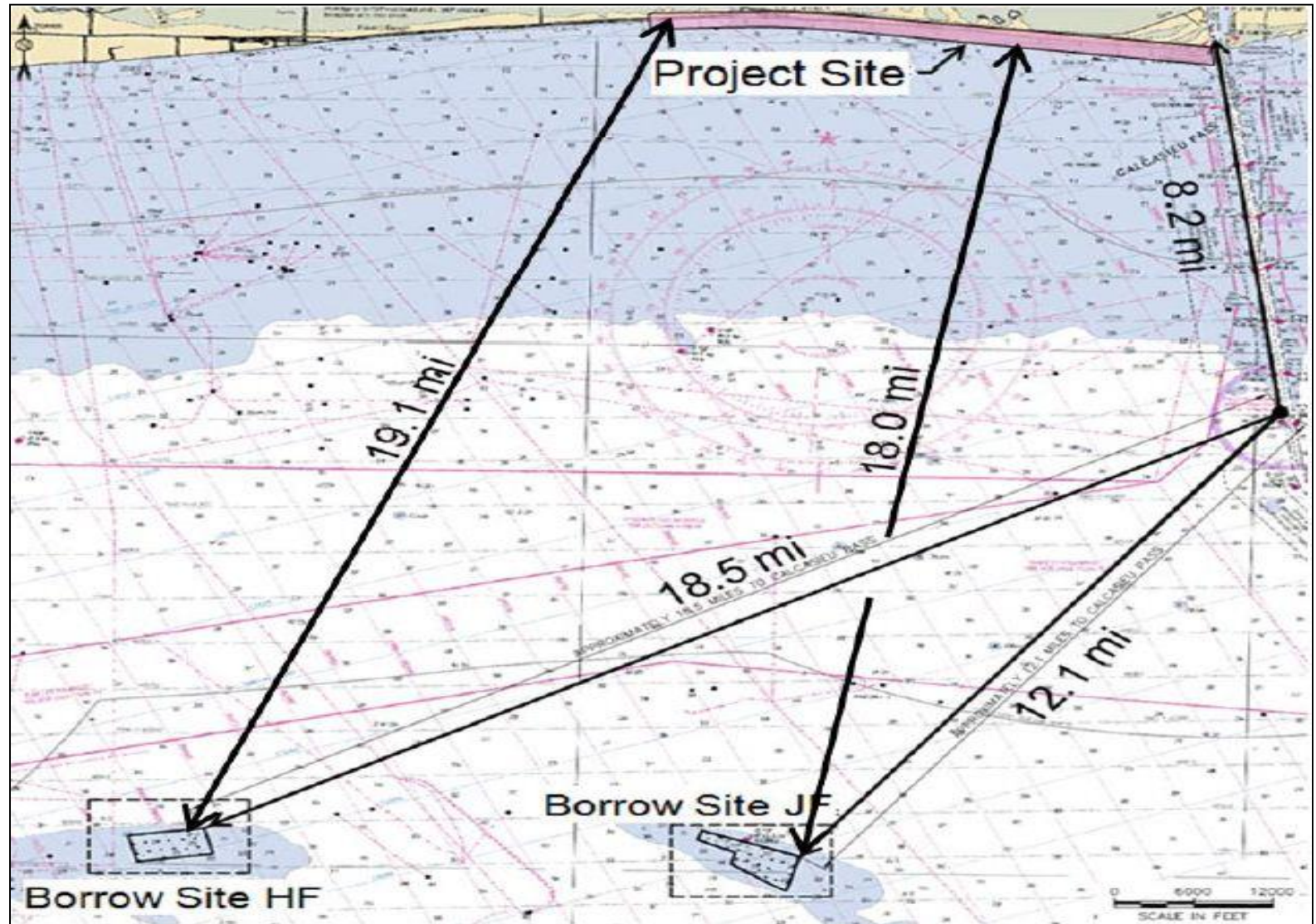
CAMERON PARISH SHORELINE (CS-33)



CAMERON PARISH SHORELINE (CS-33)



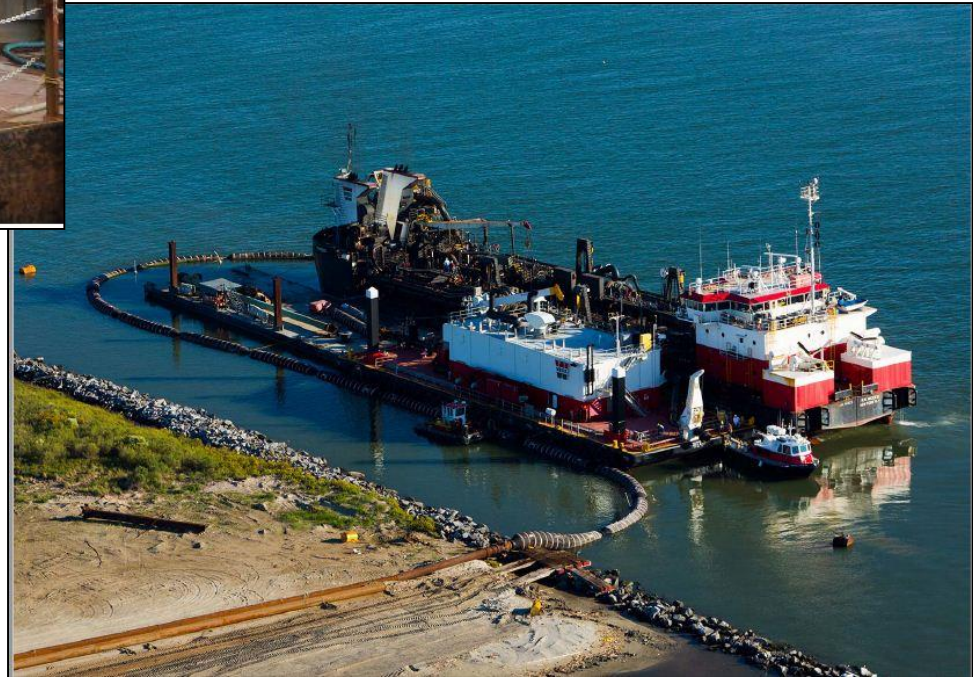
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CAMERON PARISH SHORELINE (CS-33)



CAMERON PARISH SHORELINE (CS-33)



Loggerhead



Sea Turtles

Green Sea Turtle



CAMERON PARISH SHORELINE (CS-33)



Piping Plover – Migratory Bird impacted

Cameron Parish Shoreline Project

Bird Monitoring Activities during
Construction

Terns – and other Nesting Birds could also
be impacted. Buffer Zone Required.



CAMERON PARISH SHORELINE (CS-33)



CAMERON PARISH SHORELINE (CS-33)



CAMERON PARISH SHORELINE (CS-33)



CAMERON PARISH SHORELINE (CS-33)

Cost: \$45.8 million (*100% 07-08 State Surplus funds*)

Construction: **\$40+ million**

Project Features:

- Constructed 5+ miles of beach
- Pumped 2 million cubic yards of sand from source 20+ miles in Gulf of Mexico
- Sand fencing
- Volunteer vegetative plantings

Project Status:

- Sand pumping complete: Feb 2014
- Sand fence re-built: October 2015
- Dunes forming adjacent to sand fencing



OYSTER BAYOU MARSH CREATION (CS-59)



Notes:

1. Coordinates are in feet based on the Louisiana State Plane Coordinate System, South, North American Datum of 1983 (NAD 83).
2. 2007 background imagery is from Microsoft.

Legend:

-  Oyster Bayou Restoration Project
-  Oyster Bayou Borrow Area

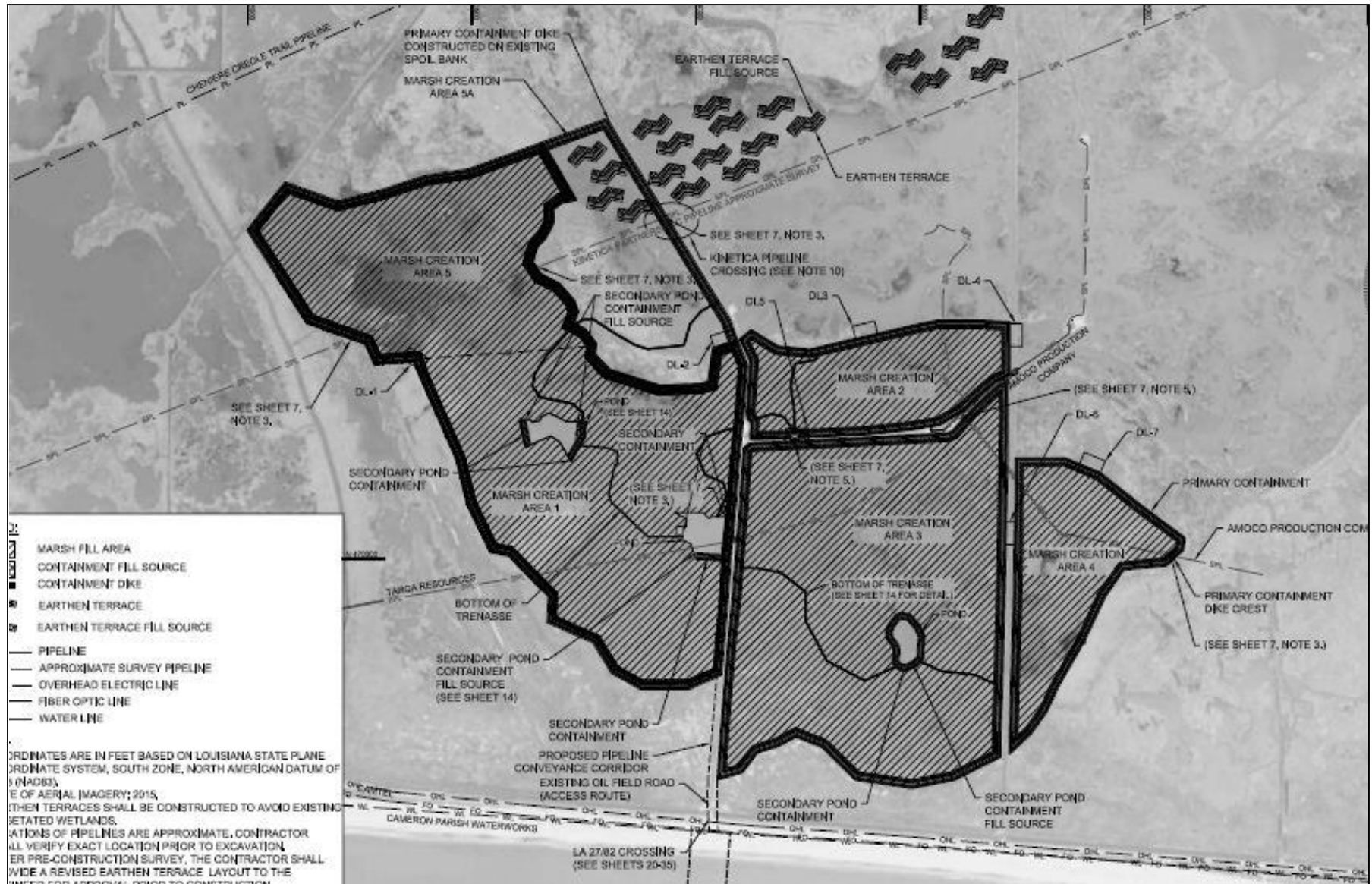


Coastal Planning & Engineering, Inc.
A CB&I Company
2481 N. W. Boca Raton Blvd.
Boca Raton, FL 33431
Ph. (561) 391-8102
Fax (561) 391 9116

Title:

Project Overview
Oyster Bayou Marsh Restoration Project CS-59
Cameron Parish, Louisiana

OYSTER BAYOU MARSH CREATION (CS-59)



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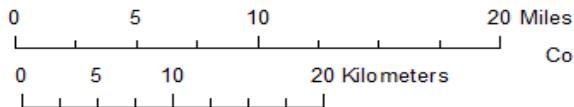
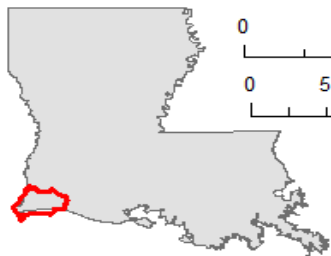
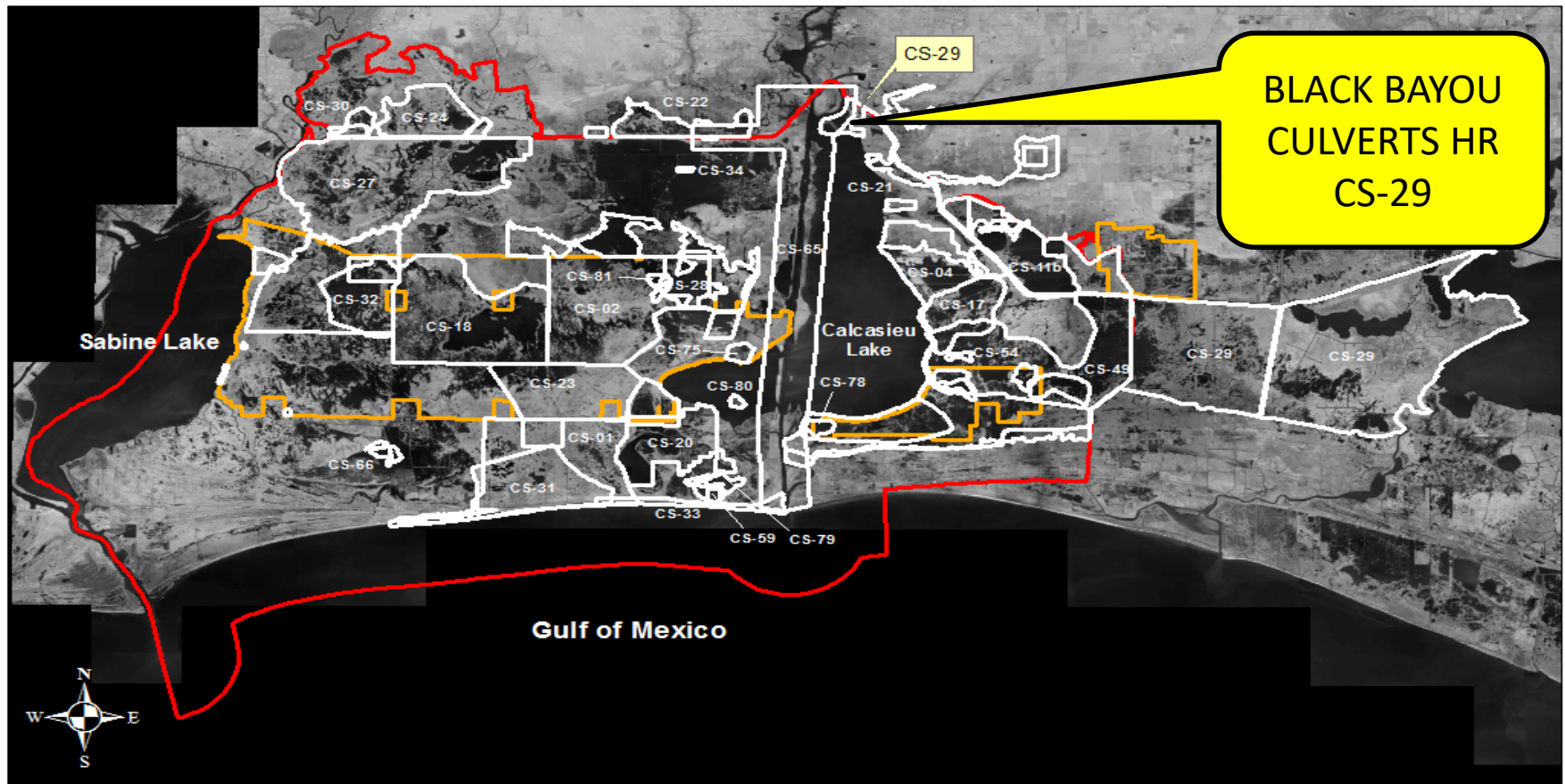
Project Features: 950 acres of marsh creation & 7,200 feet of terrace construction

Construction Cost: \$ 22.1 M

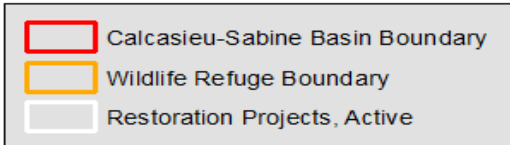
Project Status:

- Construction start: December 2016
- Marsh Creation completion: September 2017
- 54,857 ln ft of earthen containment dikes constructed
- Waterline along Hwy 82 relocated/Road crossing
- Dredged 4.31 MCY

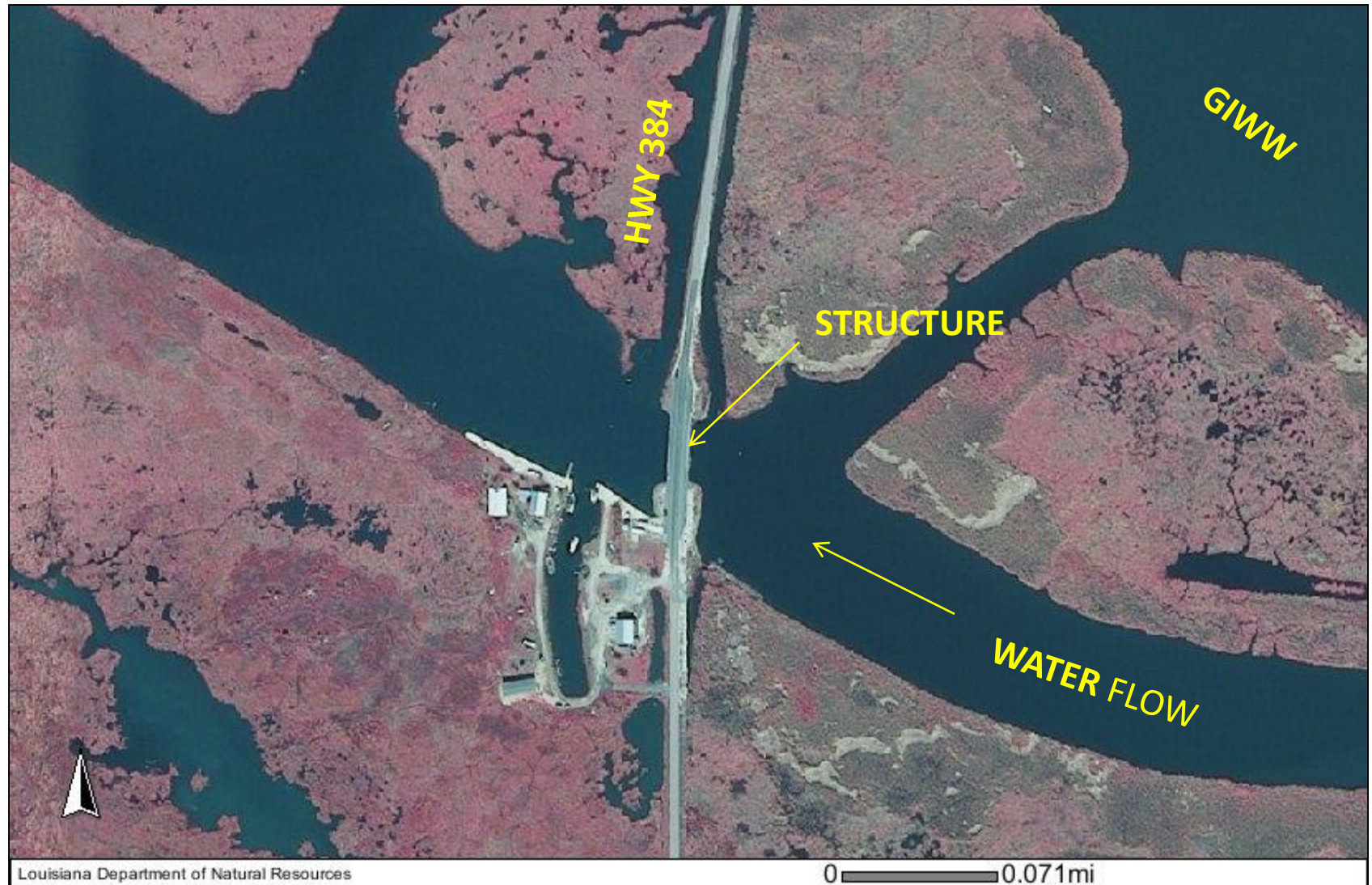
Constructed Protection and Restoration Projects



Data Source:
Coastal Protection & Restoration Authority
Lafayette Regional Office
2008 DOQQ Imagery
Map Produced: 3/20/2018
Map ID: 2018-LRO-CSBasin-02



BLACK BAYOU CULVERTS HR (CS-29)



BLACK BAYOU CULVERTS HR (CS-29)



BLACK BAYOU CULVERTS HR (CS-29)



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BLACK BAYOU CULVERTS HR (CS-29)

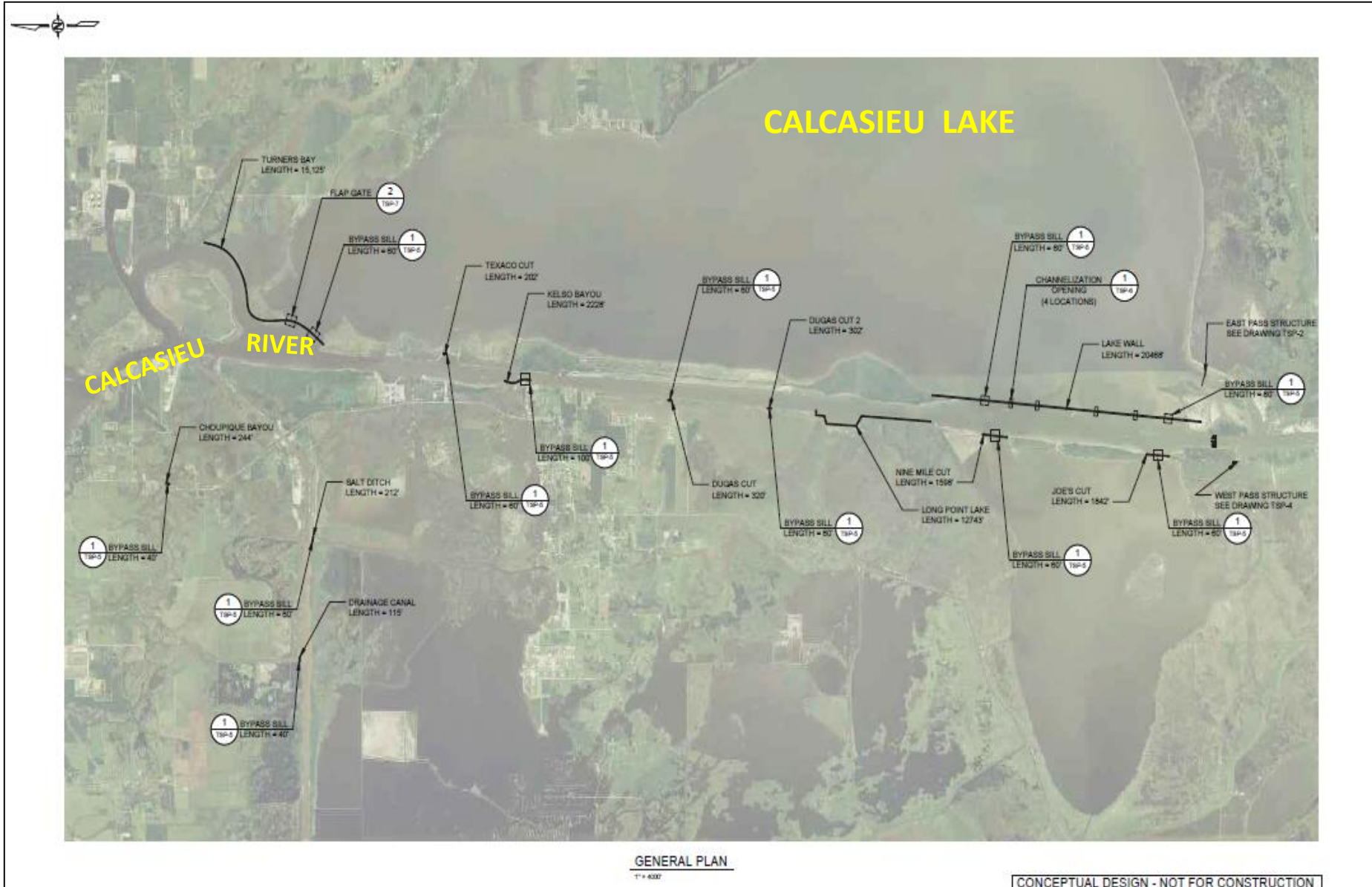
Project Features:

- Ten - 10 ft. x 10 ft. concrete box culverts with aluminum flapgates
- Temporary by-pass roadway
- 11,825 SF of steel sheet piling
- 1,500 tons of rock rip rap

Construction Cost: \$4.15 million

Construction Completed: January 2010

CALCASIEU SALINITY MEASURES (CS-65)



CALCASIEU SALINITY MEASURES (CS-65)

Planned Project Features

Original 15% Design Scope: A total of 14 structures along Calcasieu Ship Channel and connecting waterways

Structure Types:

Rock berms with steel sheet pile salinity barriers, navigable sills and fish gaps

Larger steel and concrete structures on East Pass and West Pass

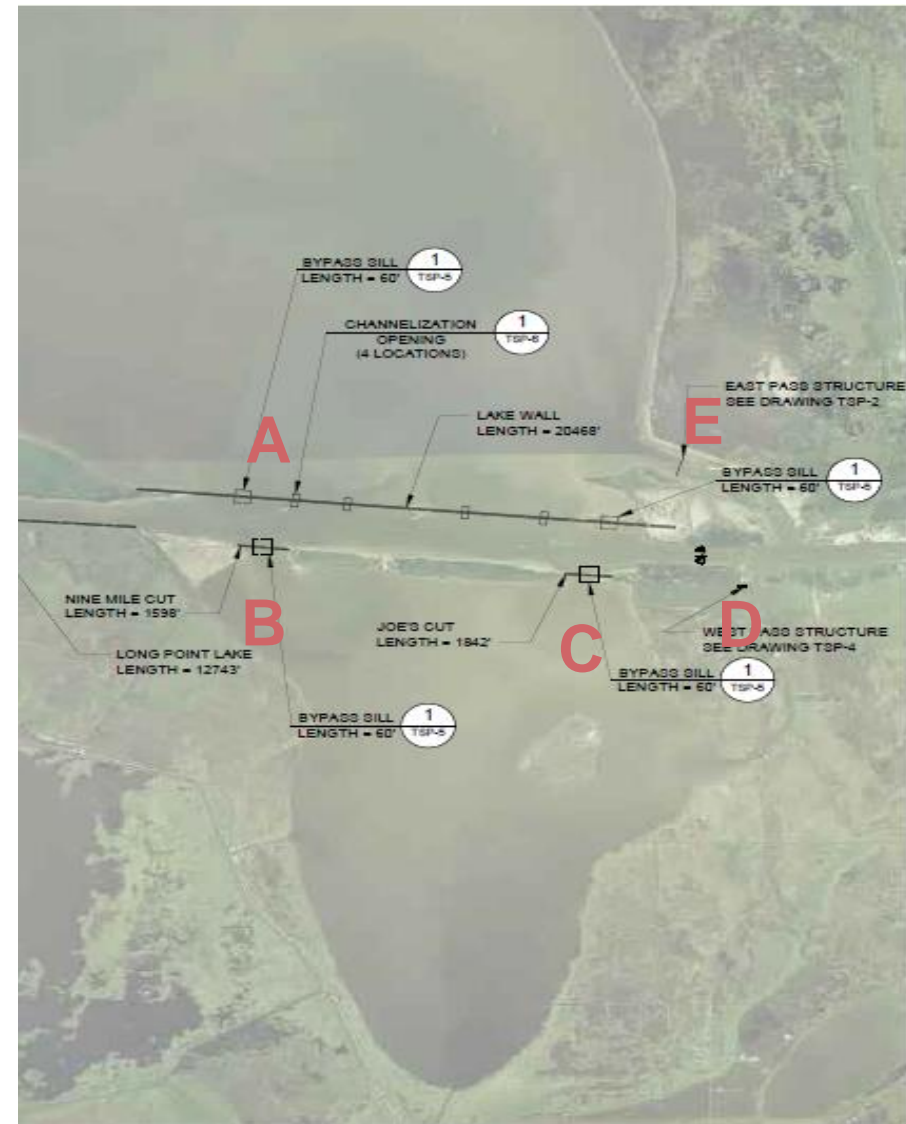
Post 15% Design Scope:

The 5 most southern structures are being proposed

CALCASIEU SALINITY MEASURES (CS-65)

SOUTHERN STRUCTURES

- A. Lake Wall – 22,000', 2 navigation sills, fish openings
- B. Nine Mile Cut – 2,000', 1 navigation sill
- C. Joe's Cut – 2,400', 1 navigation sill
- D. West Pass – 700', 1 navigation sill
- E. East Pass – 2,000', 1 navigation sill



CALCASIEU SALINITY MEASURES (CS-65)

RECOMMENDED SOUTHERN STRUCTURES ESTIMATED CONSTRUCTION COST

A. EAST PASS	\$12,060,756
B. WEST PASS	\$5,422,683
C. JOE'S CUT	\$11,230,542
D. LAKE WALL	\$118,719,371
E. NINE MILE CUT	\$8,151,277
TOTAL	\$155,584,629

CALCASIEU SALINITY MEASURES (CS-65)

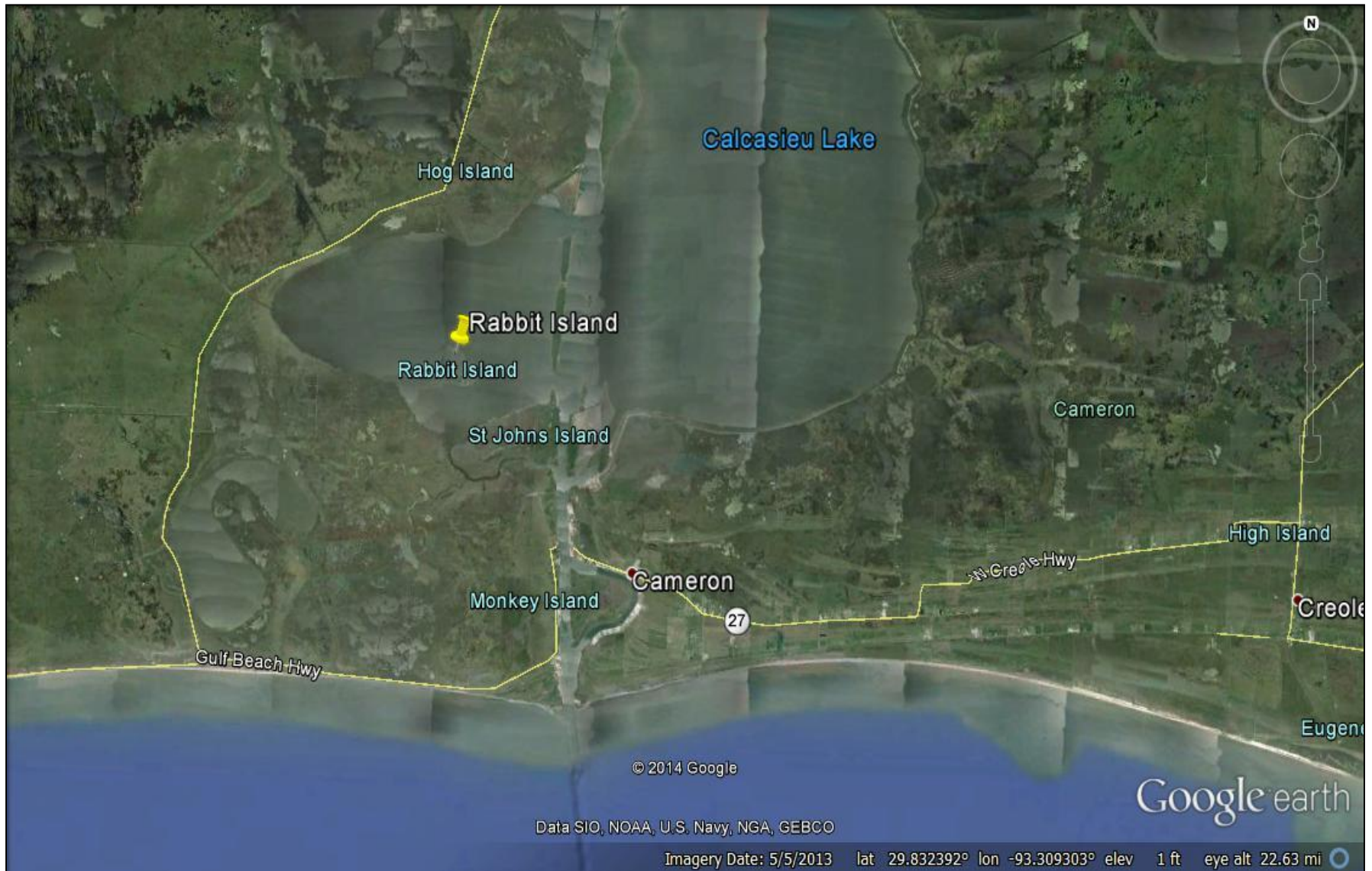
15% Design Status

Completed in April 2018

- Intend to submit permit application for construction with 15% design package in July 2018

Likely start of construction in 2021

RABBIT ISLAND MC (CS-80)



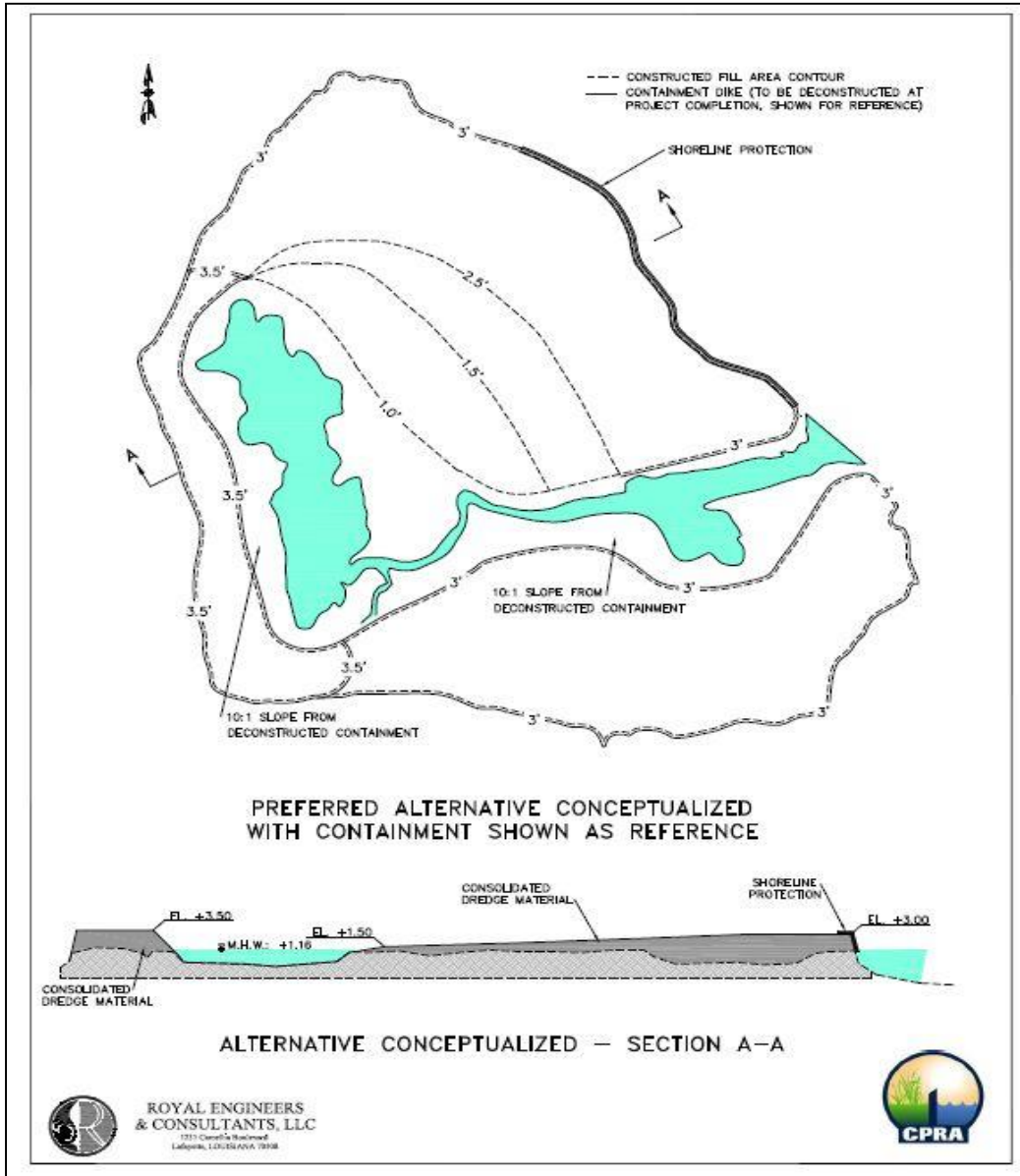
RABBIT ISLAND MC (CS-80)

- The westernmost nesting ground for colonial nesting birds, including brown pelicans, in Louisiana
- Since 1955, the island has lost 89 acres of landmass, or 35% of its area
- The island is 200 acres, with much of that being open water, and the majority of the land at or below sea level
- Highest elevation measures approximately two feet above sea level
- Located centrally along the Chenier Plain, about one mile from the southwestern shore of Calcasieu Lake and two miles west of the Calcasieu ship channel

RABBIT ISLAND MC (CS-80)



RABBIT ISLAND MC (CS-80)



RABBIT ISLAND MC (CS-80)

Post-construction acreage:

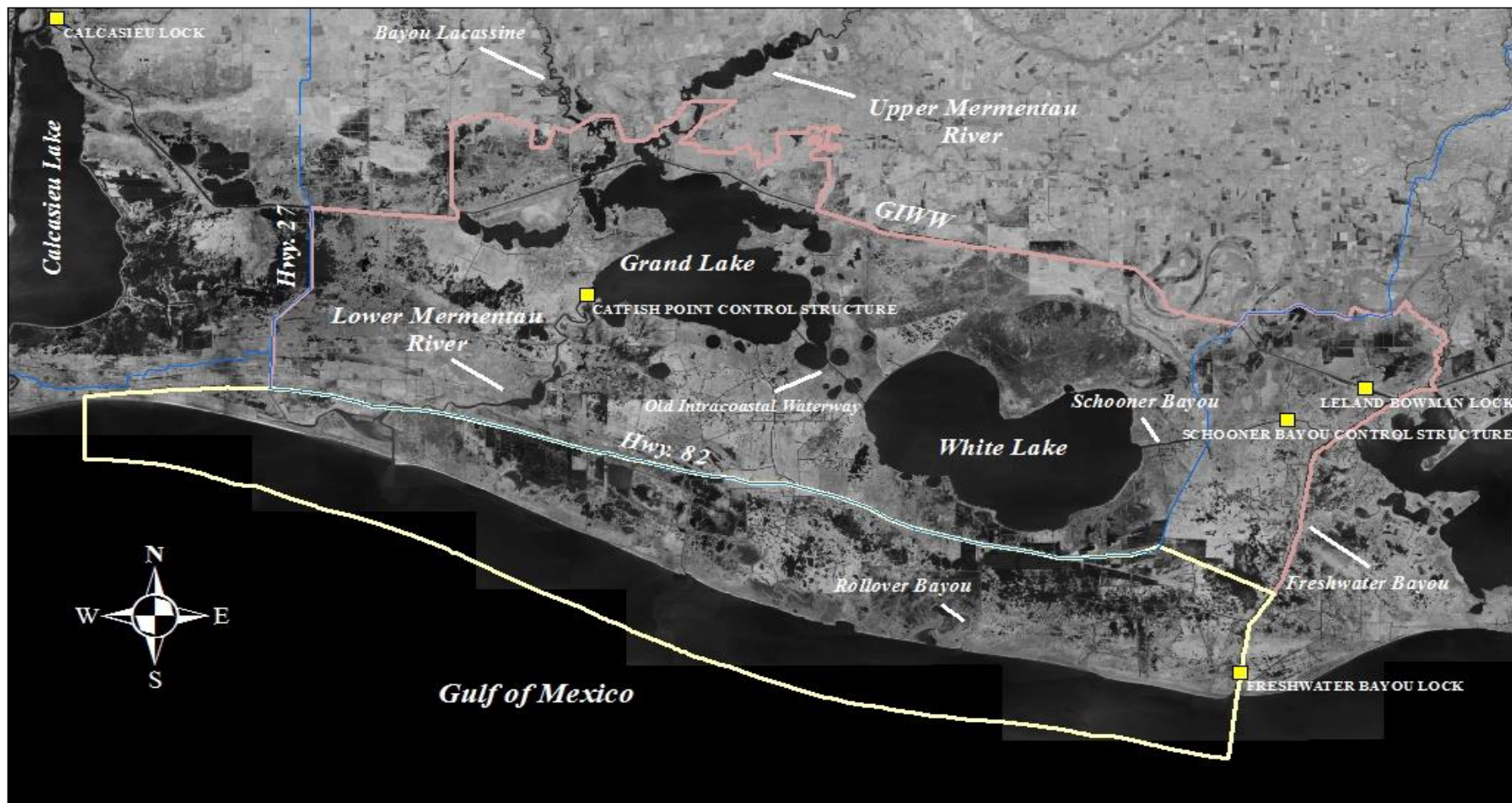
- Restore and enhance over 200 acres of rookery habitat to increase nesting habitat for colonial nesting water birds

Restoration Category:

- Replenish and Protect Coastal and Marine Resources

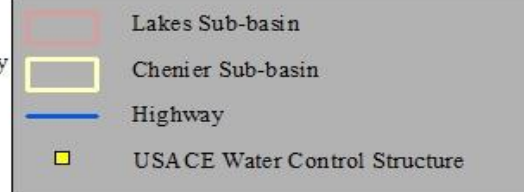
Estimated Project Cost: \$24,000,000

MERMENTAU BASIN

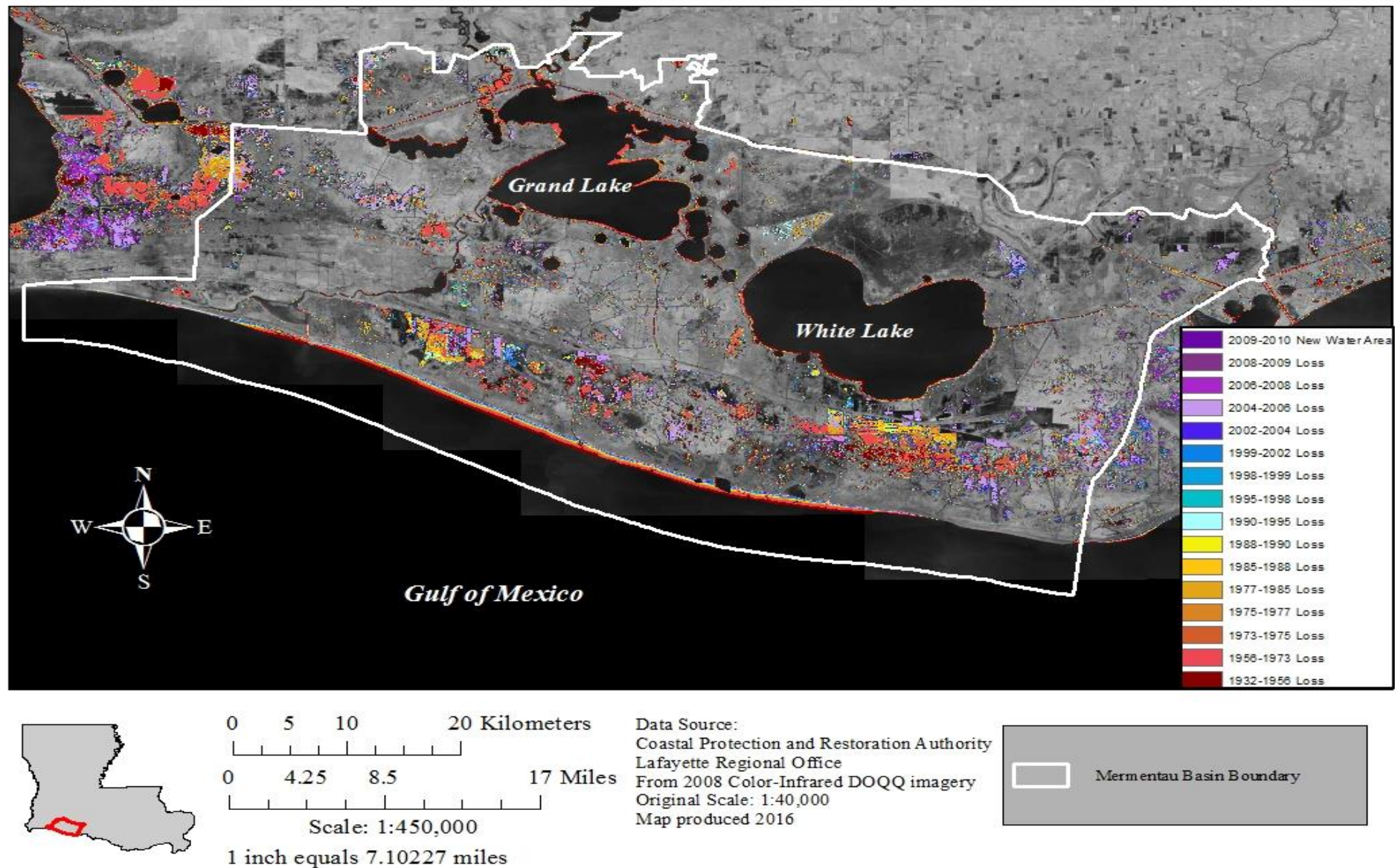


0 5 10 20 Kilometers
 0 4.25 8.5 17 Miles
 Scale: 1:450,000
 1 inch equals 7.10227 miles

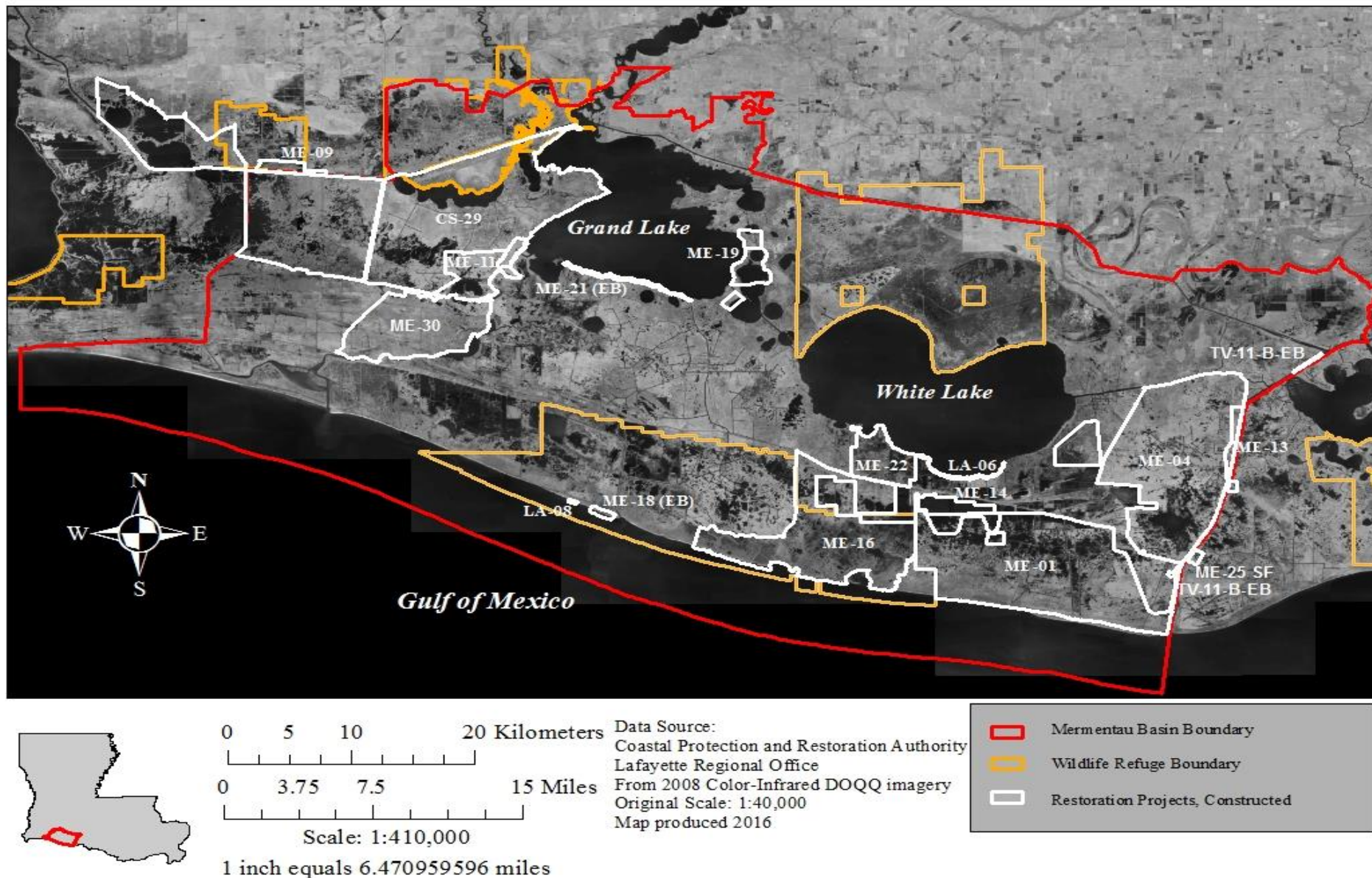
Data Source:
 Coastal Protection and Restoration Authority
 Lafayette Regional Office
 From 2008 Color-Infrared DOQQ imagery
 Original Scale: 1:40,000
 Map produced 2016



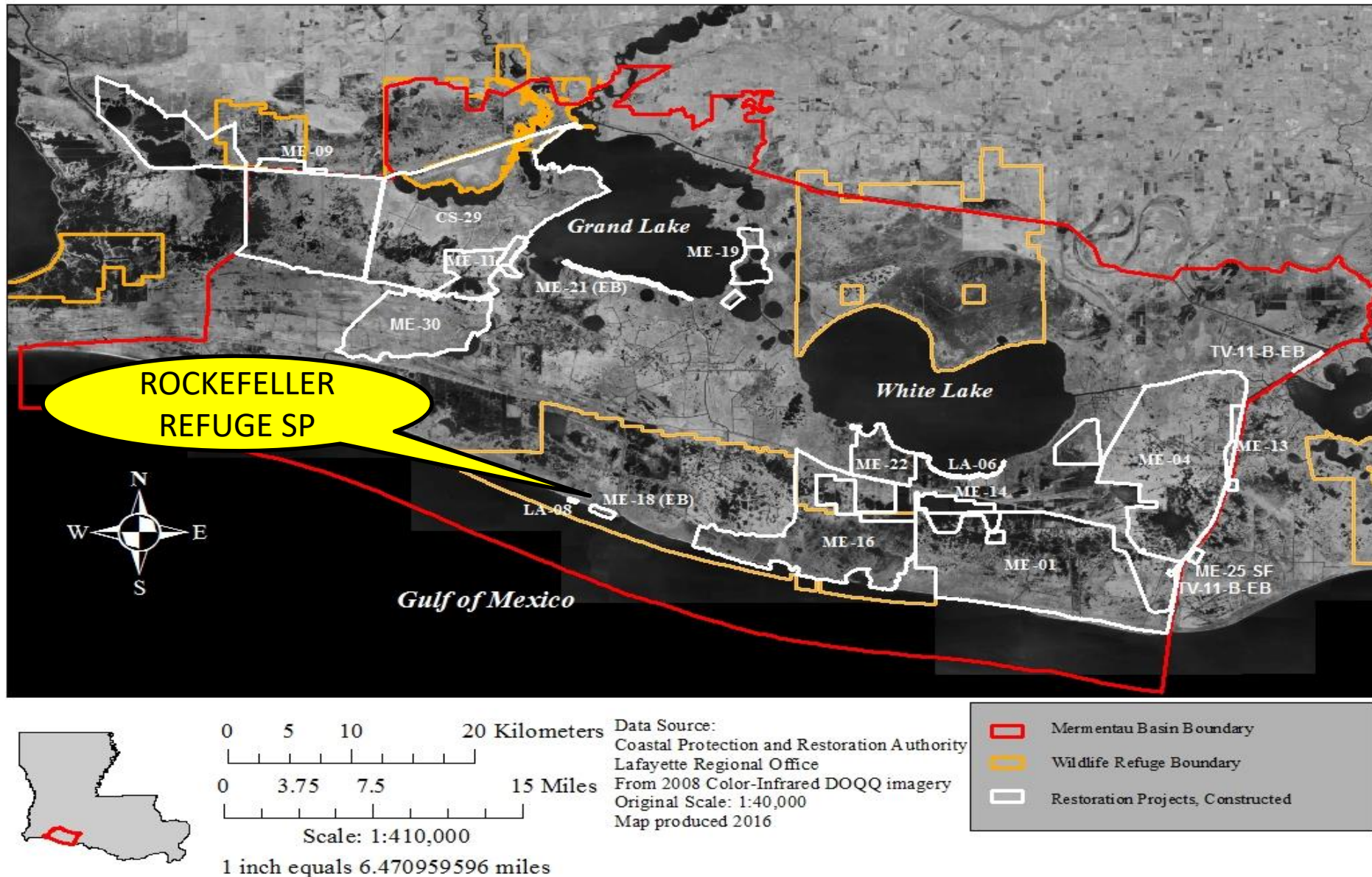
Historical Persistent Land Loss 1932-2010



Constructed Protection and Restoration Projects



Constructed Protection and Restoration Projects

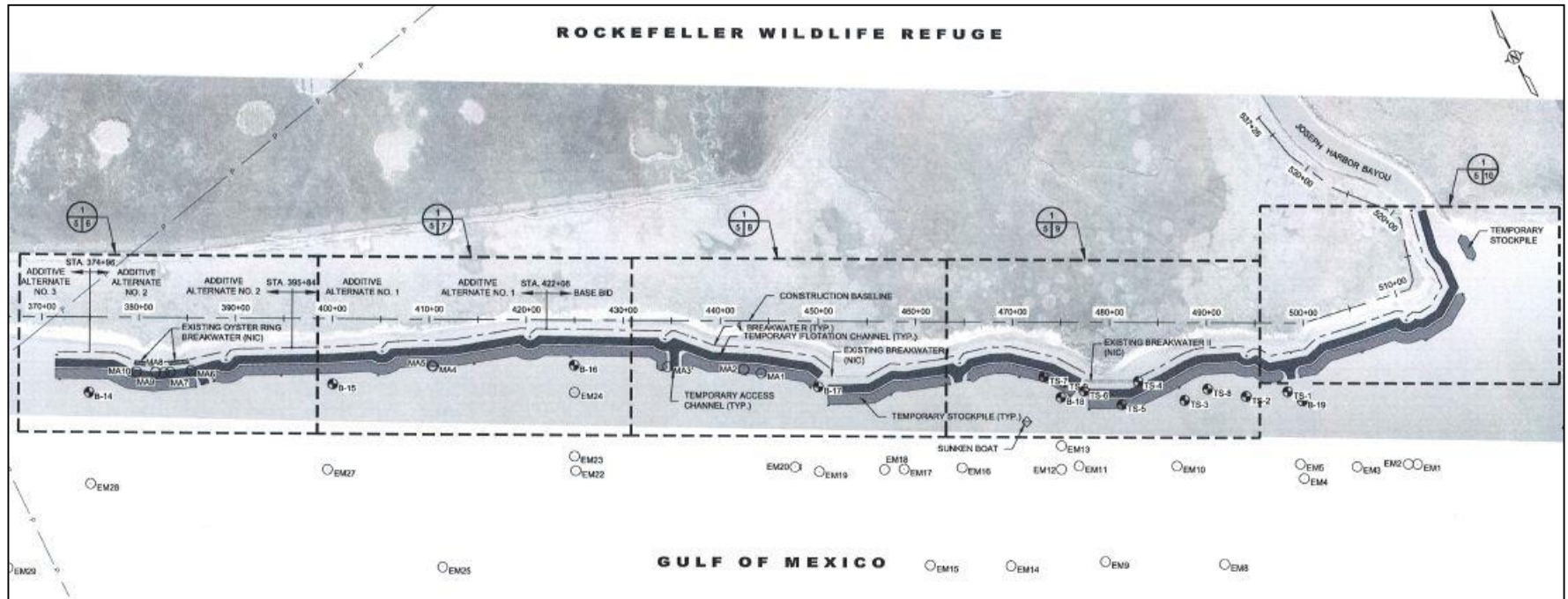


ROCKEFELLER REFUGE SHORELINE DEMO REEF BREAKWATER WITH LWA CORE (ME-18)

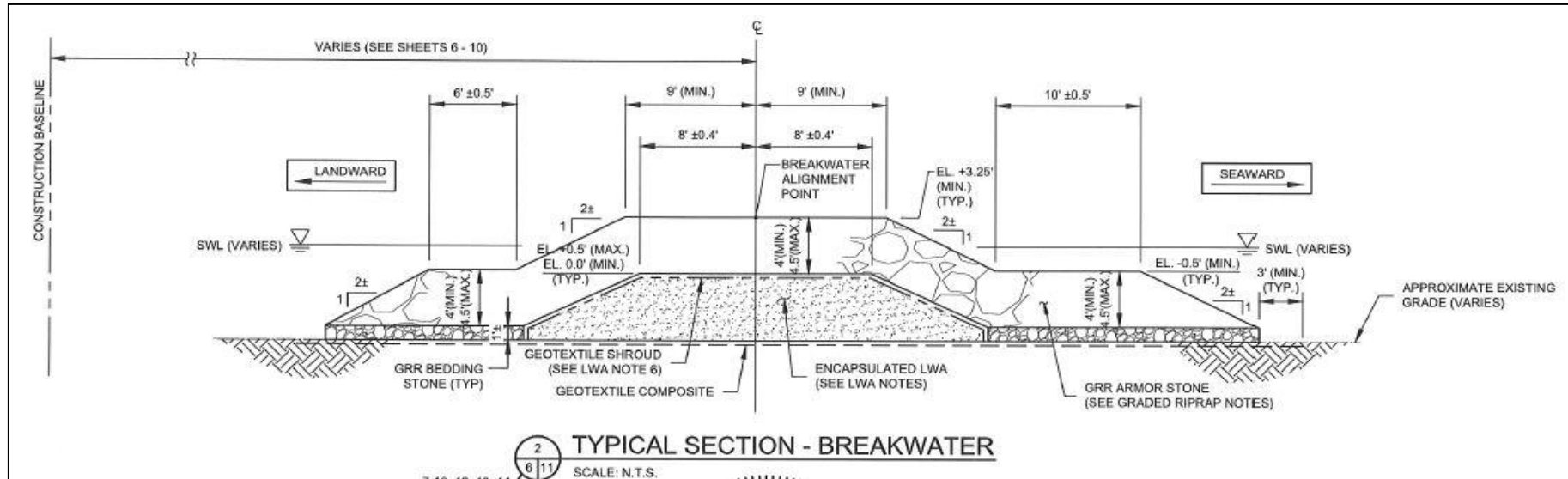


**CONSTRUCTED 2009
CIAP FUNDING**

ROCKEFELLER REFUGE SHORELINE REEF BREAKWATER WITH LWA CORE (ME-18)



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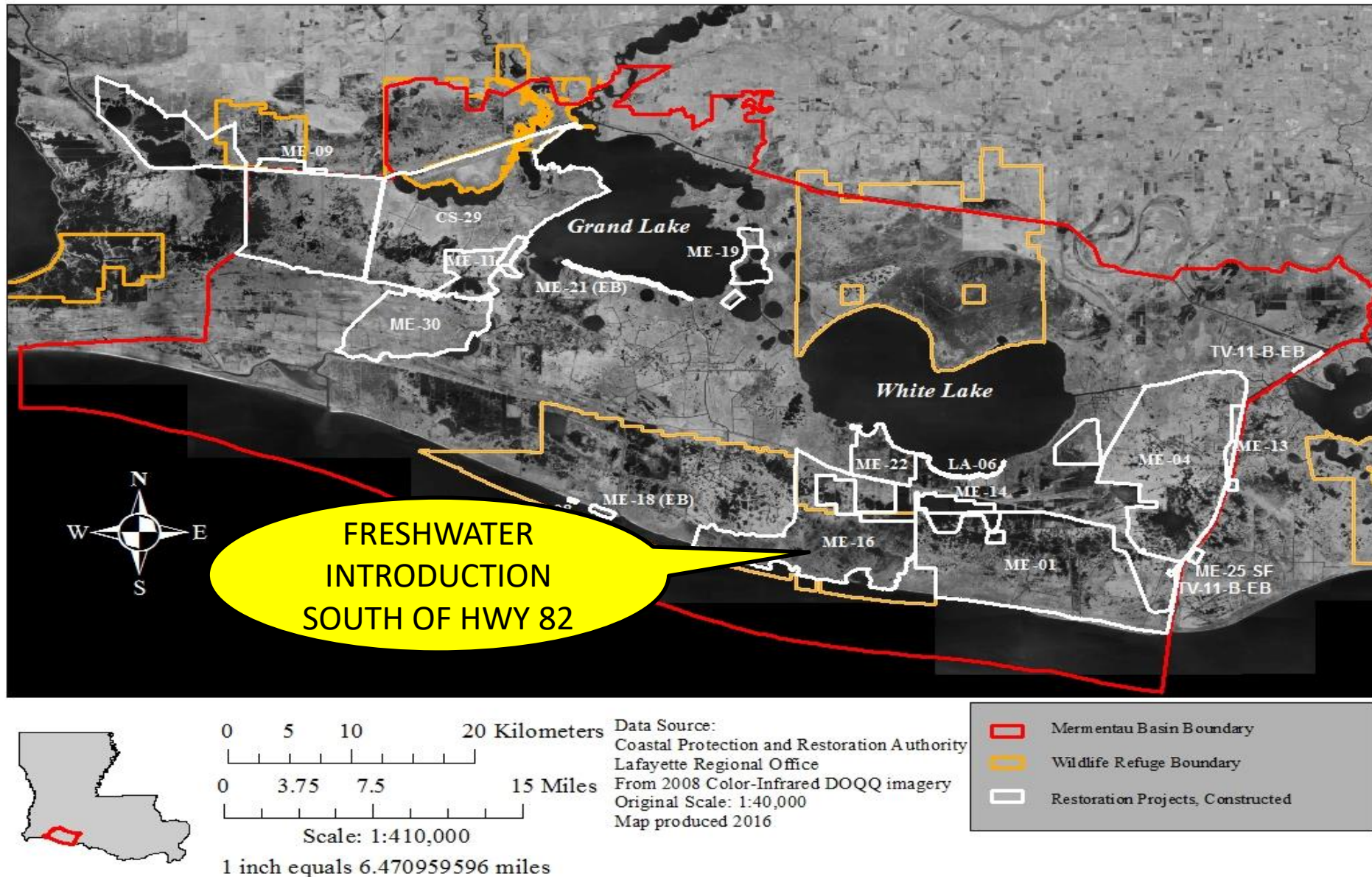
Project Features: Construct lightweight aggregate core breakwaters along shoreline for 3 miles, approximately 150' offshore on -3.5' contour.

Construction Cost: \$18.9 million (Potential Expansion) CWPPRA funding

Project Status:

- NTP issued November 1, 2017
- Additional dollars made available from other agencies
- Construction completion: June 24, 2019
(600 calendar days)

Constructed Protection and Restoration Projects



FRESHWATER INTRODUCTION SOUTH OF HWY 82 (ME-16)



FRESHWATER INTRODUCTION SOUTH OF HWY 82 (ME-16)



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FRESHWATER INTRODUCTION SOUTH OF HWY 82 (ME-16)

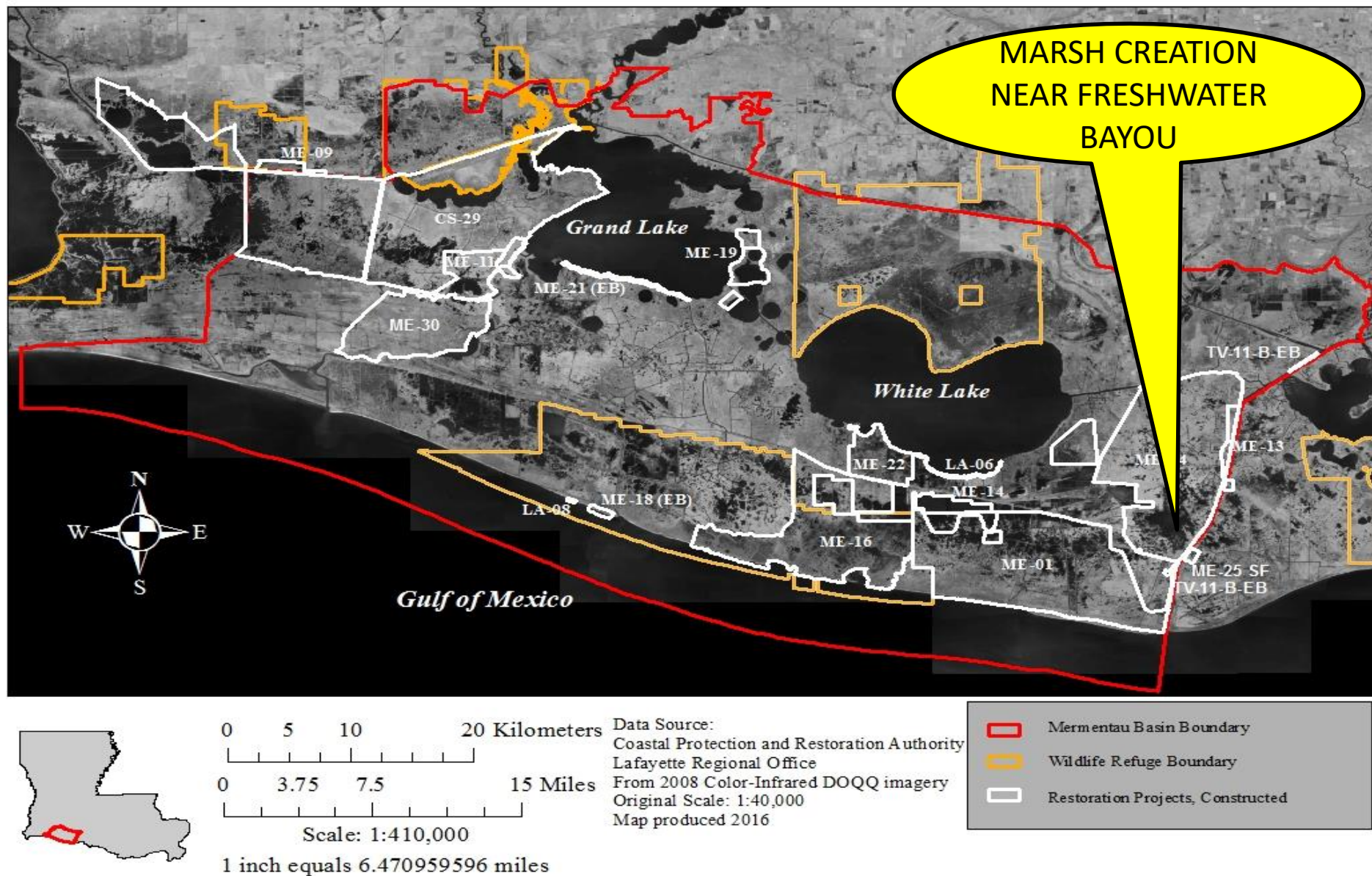
Project Features:

- Four pipe barrel structure locations, (48 " diameter), (3 or 4 barrel)
- 26,000 LF of earthen terraces
- 101,970 CY of spray dredging
- 39,432 CY of bucket dredging

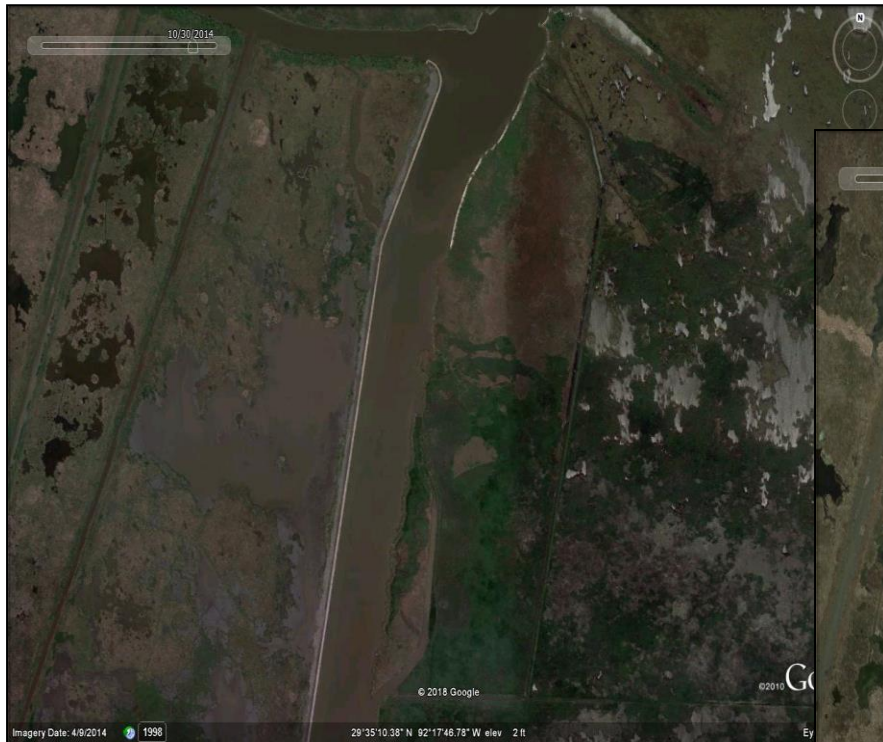
Construction Cost: \$3.94 million

Construction Completed: December 2006

Constructed Protection and Restoration Projects

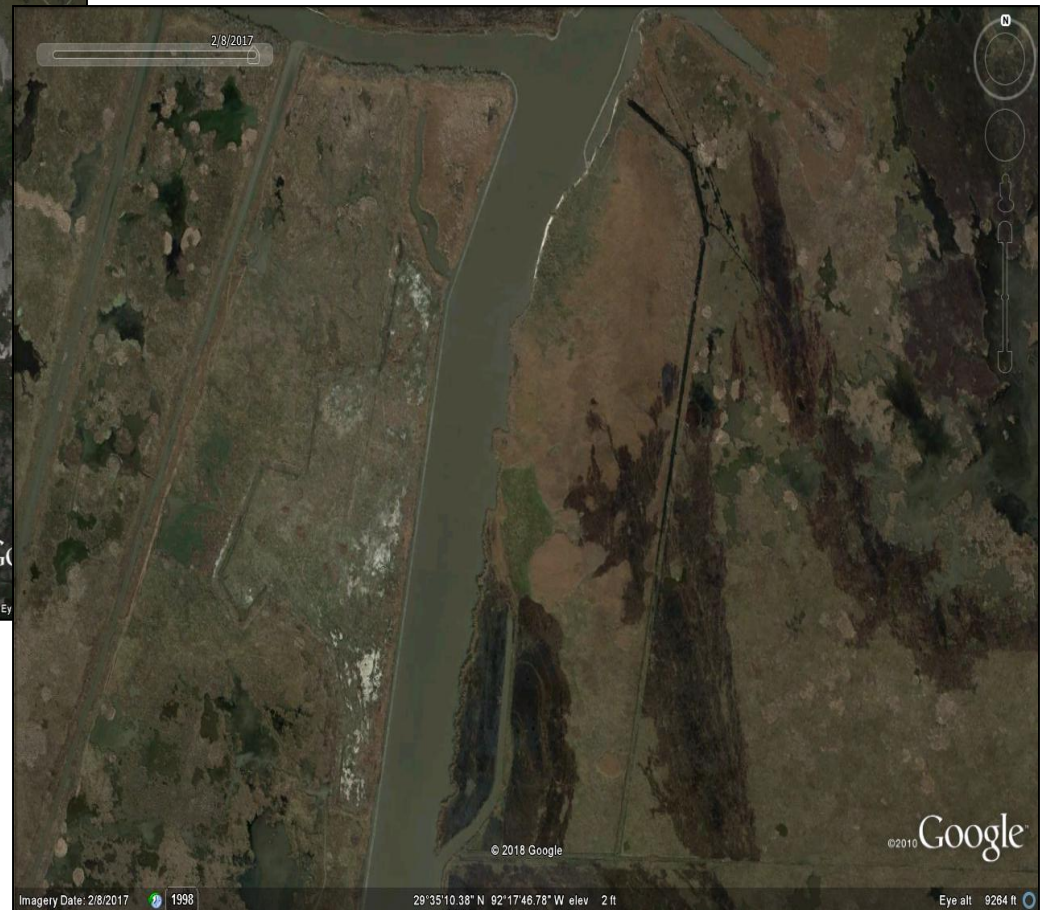


MARSH CREATION NEAR FRESHWATER BAYOU (ME-25SF)



BEFORE

AFTER



MARSH CREATION NEAR FRESHWATER BAYOU (ME-25SF)



MARSH SIDE

**FWB SIDE BEHIND
ROCK DIKE**



MARSH CREATION NEAR FRESHWATER BAYOU (ME-25SF)



MARSH CREATION NEAR FRESHWATER BAYOU (ME-25SF)



MARSH CREATION NEAR FRESHWATER BAYOU (ME-25SF)



MARSH CREATION NEAR FRESHWATER BAYOU (ME-25SF)

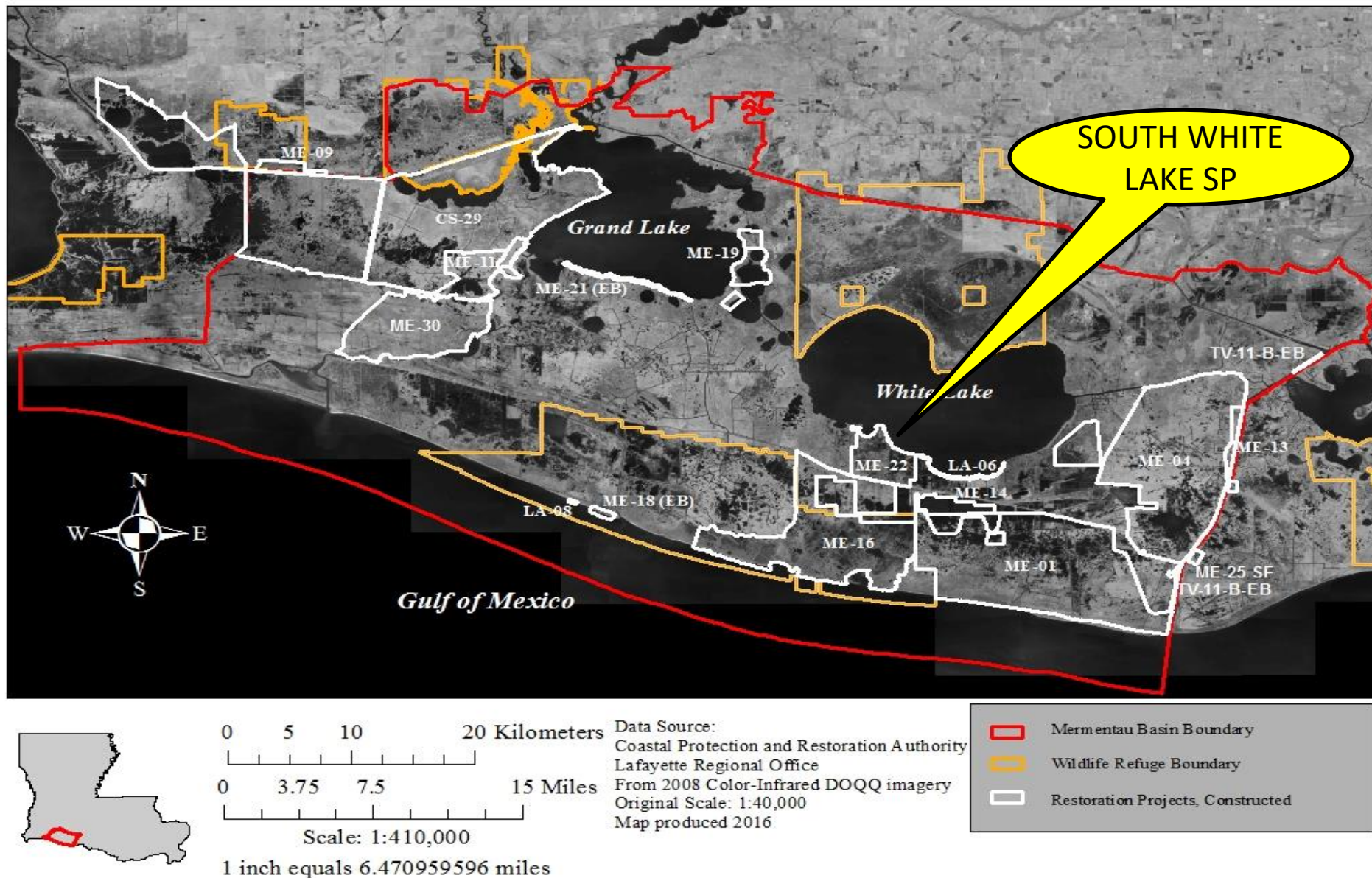
Project Features:

- Dredged 715,500 CY from Freshwater Bayou
- 12,348 LF of containment dikes
- 104 AC of marsh created
- 19 AC of marsh nourished

Construction Cost: \$2.98 million

Construction Completed: March 2015

Constructed Protection and Restoration Projects



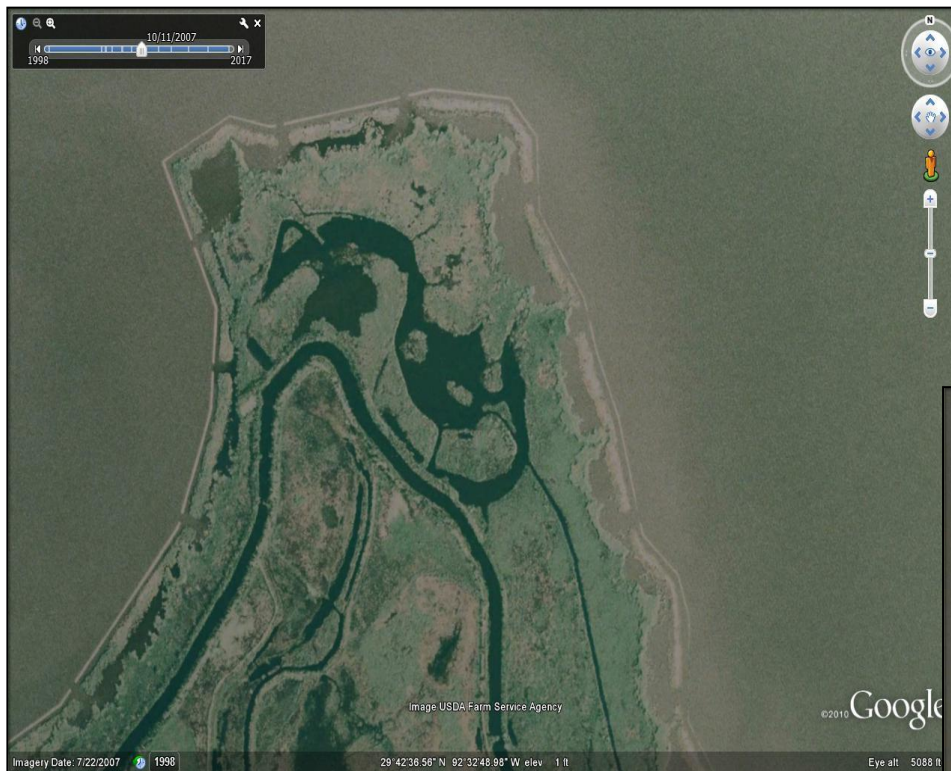
SOUTH WHITE LAKE SP (ME-22)



SOUTH WHITE LAKE SP (ME-22)

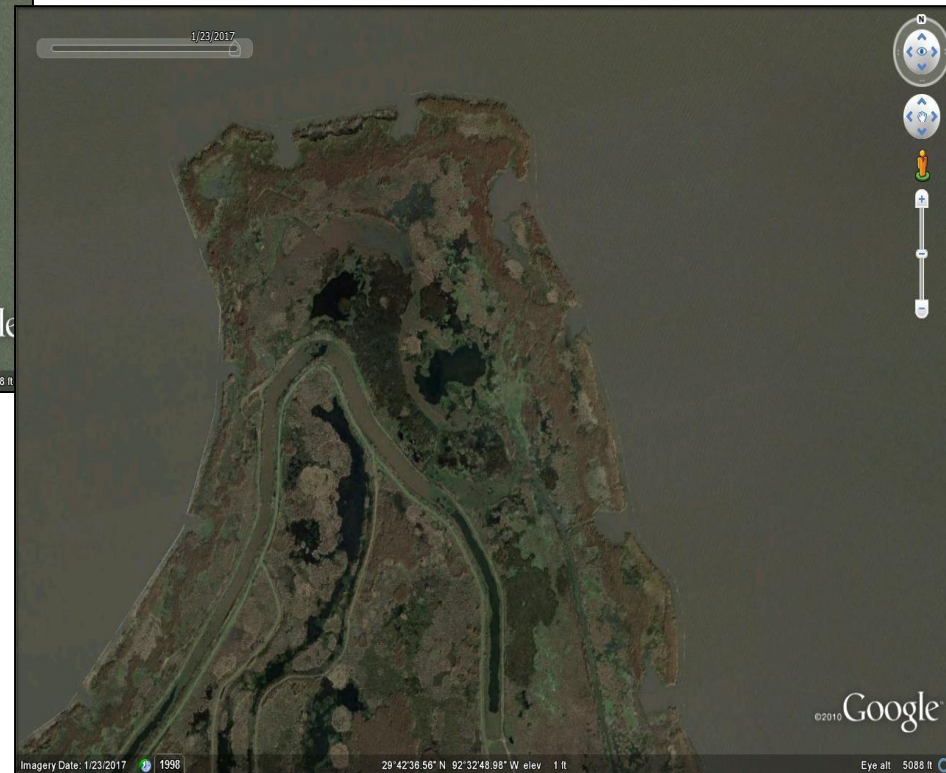


SOUTH WHITE LAKE SP (ME-22)



2007

2017



SOUTH WHITE LAKE SP (ME-22)



2016

SOUTH WHITE LAKE SP (ME-22)

Project Features:

- Dredged approx. 1.1 MCY of flotation excavation (11 miles)
- 241,329 tons of #650 stone

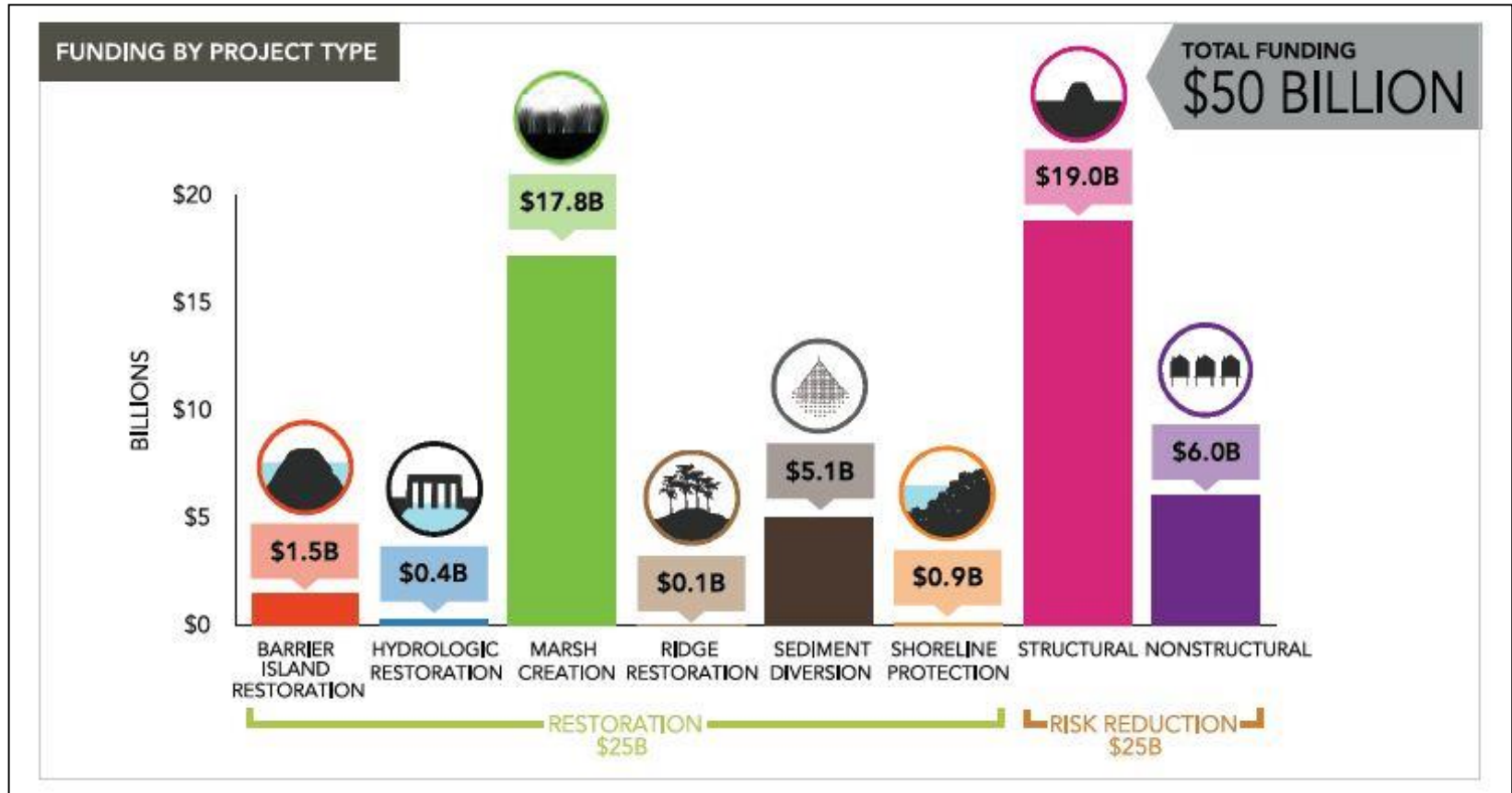
Construction Cost: \$9.66 million

Construction Completed: August 2006

Project Effects on the Basin

- Shoreline protection projects have been highly successful
- Hydrologic restoration projects have been successful when conditions allow
- Marsh creation projects also successful, provide instant benefits
- Terracing projects have effectively reduced fetch and increased SAV
- Demonstration projects have provided valuable data for project development
- These projects are all consistent with CPRA's Master Plan

Proposed Master Plan Funding





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